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EXAMINER	
MICHALSKI, JUSTIN I	

ART UNIT	PAPER NUMBER
2644	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/058,000	WILCOCK, LAWRENCE	
	Examiner	Art Unit	
	Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2 and 5*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in United Kingdom on 01/29/2001 and 11/20/2001. It is noted, however, that applicant has not filed a certified copies of the 0102230.0 and 0127766.4 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-10, 12-18, 20-24, 26, 28-31, 33-37, 39, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmandt ("Audio Hallway: a Virtual Acoustic Environment for Browsing," ACM 0-58113-034-1/98/11, UIST '98).

Regarding Claim 1, Schmandt discloses an audio user-interfacing method in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses a spatial model of an ordered array of sounds (i.e. synthesized sound sources) about a user's head) (Figure 5 and Page 167, Column 2, first paragraph under Rooms heading), the method including the steps of: (a) associating at least some of the sound sources into a collection of which they are members (Schmandt discloses rooms

(i.e. collections) which contain typically six to twenty individual files (i.e sound sources)) (Page 167, Column 2, first paragraph under Rooms heading); and (b) changing the collection in either direction between: an un-collapsed state in which the member sound sources are present un-muted in the audio field (Schmandt discloses while user is inside a room (i.e un-collapsed state) user can listen up to four files simultaneously (i.e. audio sources are un-muted) (Page 167, Column 2, first paragraph under Rooms heading); a collapsed state in which the member sound sources are muted and collection-representing sound sources provides an audible presence for the collection in the audio field (Schmandt discloses while user is outside a room in hallway (i.e. collapsed state) braided audio provides a single acoustic representation of a cluster of related audio files (i.e. audible presence for collection)) (Page 166, Column 2, Paragraph 1).

Regarding Claim 2, Schmandt further discloses the collection changes state, at least in one direction, in response to user command (When the user tilts their head in the direction of a doorway while passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 3, Schmandt further discloses the collection changes state, at least in one direction, automatically upon detection of predetermined trigger conditions (When the user tilts their head in the direction of a doorway (i.e. trigger condition) while passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 5, Schmandt further discloses the collection-representing sound source is muted when the collection is in its un-collapsed state (When entry is gained into a room (i.e. un-collapsed state) braided audio from the hallway goes silent (i.e. muted)) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 6, Schmandt further discloses the change between collection states, at least in one direction, is accompanied by a corresponding sound suggestive of moving to the end state of the current change (When entry is gained into a room (i.e. changing from collapsed to un-collapsed state) braided audio from the hallway goes silent (i.e. suggestive sound)) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 7, Schmandt further discloses that the change between collection states from hallway (i.e. collapsed) to room (i.e. un-collapsed), is accompanied by moving the member sound sources through the audio field between the location of the collection-representing sound source (braided audio is a mix of all the sounds in the cluster heard emitting from a doorway) (Figure 3, Page 163, paragraph bridging columns 1 and 2) and their normal locations (Figure 5).

Regarding Claim 8, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source provides an audio label for the collection, this label being repeated at intervals (When user is in hallway (i.e. collapsed state) braided audio is used as a single acoustic representation of a cluster of audio files (i.e. audio label) being repeated in intervals (Figure 2) (Page 166, Column 2, Paragraph 1).

Regarding Claim 9, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source outputs at least extracts of the sounds associated with the collection member sound sources when un-collapsed (When user is in hallway (i.e. collapsed state) braided audio or collection-representing sound source (page 163 paragraph bridging column 1 and 2) emanates from doors which user is passing) (Figure 3).

Regarding Claim 10, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source is used to provide audio notifications of events related to the items represented by the member sound sources (When user is in hallway (i.e. collapsed state) braided audio (i.e. collection-representing sound source) is used to represent cluster of related audio files (i.e. member sound sources) (Page 167, Column 2, first paragraph under Rooms heading) and to convey the general topic of a story (i.e. notification of events) (Page 166, Column 1 last paragraph).

Regarding Claim 12, Schmandt further discloses the collection is associated with a respective audio-field reference relative to which the member sound sources of the collection are positioned, other sound sources, if any, in the audio field being positioned relative to one or more further audio-field references, the audio-field references being independently movable relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources, with movement of a said audio-field reference relative to the presentation reference resulting in corresponding movement of the associated sound sources (Files are arrayed in front

of users head (i.e. reference) who can fade in and out or neighboring sounds with head rotation (i.e. independently moveable) (Figure 5 and Page 167, Column 2, first paragraph under Rooms heading). Head position (i.e. reference) is gained from a sensor mounted on the headphones (Page 169, column 1, first full paragraph).

Regarding Claim 13, Schmandt further discloses the audio field reference associated with the collection is world-stabilized (head position is gained from a position sensor mounted on the headphones (i.e. stabilized relative to the world) (Page 169, column 1, first full paragraph) and the member sound sources represent augmented reality services, each member sound source being positioned relative to the audio field reference of the collection such that for a user located in a notional reference position, the sound sources lies in the same direction as a corresponding real-world location associated with the augmented reality service represented by the sound source (Audio files are positioned around users head who can fade in and out of neighboring sounds with head rotation) (Figure 5 and Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 14, Schmandt further discloses the audio field is rendered by apparatus including audio output deices according to sound-source data indicative of the rendering position and audibility of the each sound source in the audio field, the muting and un-muting of said member sound sources to collapse and un-collapse the collection being effected by changing sound-source data for these sound sources to appropriately set the audibility of the sources (Hallway and Room audio are produced by separate PCs and audio spatialization software along with a head position sensor

mounted on headphones as audio output device) (Paragraph bridging pages 189 and 169; and page 169 first full paragraph).

Regarding Claim 15, Schmandt further discloses upon un-collapsing of the collection, at least some of the other sound sources, if any, in the audio field have their presentation adjusted (When user enters room braided audio (i.e. sound sources) from the hallway (i.e. audio field) goes silent (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 16, Schmandt discloses an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses a spatial model of an ordered array of sounds (i.e. synthesized sound sources) about a user's head) (Figure 5 and Page 167, Column 2, first paragraph under Rooms heading), the apparatus comprising: storage means for storing data on the sound sources (PCs and audio servers) (Page 168-169 discussion under system architecture), this data including audibility data for controlling the audibility of the sound sources in the audio field (audio spatialization software (Paragraph bridging pages 168 and 169), and collection data for associating at least some of the sound sources into a collection of which those sound sources are members (six to twenty files (i.e. sound sources) are located in a room (i.e. collection) (Page 167, Column 2, first paragraph under Rooms heading) and for further associating with the collection a collection-representing sound source (headphones) (Page 169, column 1, first full paragraph); rendering-position determining means (sensor mounted on headphones) (Page 169, column 1, first full paragraph) for

determining, for each said sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field (user can fade in and out of sounds with head rotation) (Figure 5, and Page 167, Column 2, first paragraph under Rooms heading); collection–control means for changing the collection in either direction between un-collapsed and collapsed states (while user is in hallway (i.e. collapsed state) user can enter room (i.e. un-collapsed state)) (Page 167, Column 2, first paragraph under Rooms heading) and for correspondingly setting the audibility data of the associated sound sources such that: in the un-collapsed state of the collection, the member sound sources are audible (sounds play in an array positioned around the users head) (Page 167, Column 2, first paragraph under Rooms heading); in the collapsed state of the collection, the member sound sources are muted and the collection-representing sound source provides an audible presence for the collection in the audio field (Schmandt discloses while user is outside a room in hallway (i.e. collapsed state) braided audio provides a single acoustic representation of a cluster of related audio files (i.e. audible presence for collection)) (Page 166, Column 2, Paragraph 1); and rendering means (PCs, software, and headphones) (Pages 168-169 discussion under system architecture), including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions and with audibility as set by said collection-control means.

Regarding Claim 17, Schmandt further discloses the collection-control means includes user input means for changing the collection state, at least in one direction (When the user tilts their head (i.e. input means) in the direction of a doorway while

passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 18, Schmandt further discloses the collection-control means is operative to set the audibility data of the collection-representing sound source such that this source is muted in the audio field when the collection is in its un-collapsed state (When the user tilts their head in the direction of a doorway (i.e. trigger condition) while passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 20, Schmandt further discloses the collection-control means is operative to set the audibility data of the collection-representing sound source such that this source is muted in the audio field when the collection is in its un-collapsed state (When entry is gained into a room (i.e. un-collapsed state) braided audio from the hallway goes silent (i.e. muted)) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 21, Schmandt further discloses that the collection-control means is operative in changing between collection states from hallway (i.e. collapsed) to room (i.e. un-collapsed), is accompanied by moving the member sound sources through the audio field between the location of the collection-representing sound source (braided audio is a mix of all the sounds in the cluster heard emitting from a doorway) (Figure 3, Page 163, paragraph bridging columns 1 and 2) and their normal locations (Figure 5).

Regarding Claim 22, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source provides an audio label for the collection, this label being repeated at intervals (When user is in hallway (i.e. collapsed state) braided audio is used as a single acoustic representation of a cluster of audio files (i.e. audio label) being repeated in intervals (Figure 2) (Page 166, Column 2, Paragraph 1).

Regarding Claim 23, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source outputs at least extracts of the sounds associated with the collection member sound sources when un-collapsed (When user is in hallway (i.e. collapsed state) braided audio or collection-representing sound source (page 163 paragraph bridging column 1 and 2) emanates from doors which user is passing) (Figure 3).

Regarding Claim 24, Schmandt further discloses notification means operative when the collection is in its collapsed state, to provide via the collection-representing sound source, audio notifications of events related to the items represented by the member sound sources (When user is in hallway (i.e. collapsed state) braided audio (i.e. collection-representing sound source) is used to represent cluster of related audio files (i.e. member sound sources) (Page 167, Column 2, first paragraph under Rooms heading) and to convey the general topic of a story (i.e. notification of events) (Page 166, Column 1 last paragraph).

Regarding Claim 26, Schmandt further discloses the rendering-position determining means comprises: means for setting the location of each said collection

member sound source relative to an audio-field reference (audio files (i.e. sound sources) can be faded in and out of through head rotation (i.e. setting location)) (Page 167, column 2, first paragraph under heading of Rooms); means for controlling an offset between the audio field reference (Figure 5) and a presentation reference (headphones), the presentation reference being determined by a mounting configuration of the audio output devices (headphones and position sensor on head) (Page 169, first full paragraph); and means for deriving the rendering position of each sound source based on the location of the sound source in the audio field and said offset (audio spatialization software (Page 168 and 169 discussion under system architecture).

Regarding Claim 28, Schmandt further discloses the said means for setting an offset between the audio field reference (Figure 5) and a presentation reference (headphones), comprises user input means for enabling a user to change said offset (user can fade in and out of neighboring sounds with head rotation) (page 167, column 2, first paragraph under heading Rooms), and stabilization means (position sensor) (Page 169, column 1, first full paragraph) for varying the said offset such as to stabilize the audio field reference relative the world.

Regarding claim 29, Schmandt discloses an apparatus for providing an audio user interface in which items are represented in an audio field corresponding synthesized sound sources from where sounds related to the items appear to emanate (Schmandt discloses a spatial model of an ordered array of sounds (i.e. synthesized sound sources) about a user's head) (Figure 5 and Page 167, Column 2, first paragraph under Rooms heading), the apparatus comprising: a data store for storing data on the

sound sources (PCs and audio servers) (Page 168-169 discussion under system architecture), this data including audibility data for controlling the audibility of the sources in the audio field (audio spatialization software (Paragraph bridging pages 168 and 169), and collection data for associating at least some of the sound sources into a collection of which those sound sources are members (six to twenty files (i.e. sound sources) are located in a room (i.e. collection) (Page 167, Column 2, first paragraph under Rooms heading) and for further associating with the collection a collection-representing sound source (headphones) (Page 169, column 1, first full paragraph); a rendering-position determining arrangement (sensor mounted on headphones) (Page 169, column 1, first full paragraph) operative to determine, for each said sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field (user can fade in and out of sounds with head rotation) (Figure 5, and Page 167, Column 2, first paragraph under Rooms heading); a collection-control arrangement operative to change the collection in either direction between un-collapsed and collapsed states (while user is in hallway (i.e. collapsed state) user can enter room (i.e. un-collapsed state)) (Page 167, Column 2, first paragraph under Rooms heading) and to correspondingly set the audibility data of the associated sound sources such that: in the un-collapsed state of the collection, the member sound sources are audible (sounds play in an array positioned around the users head) (Page 167, Column 2, first paragraph under Rooms heading); in the collapsed state of the collection, the member sound sources are muted and the collection-representing sound source provides an audible presence for the collection in the audio field (Schmandt discloses while user is

outside a room in hallway (i.e. collapsed state) braided audio provides a single acoustic representation of a cluster of related audio files (i.e. audible presence for collection)) (Page 166, Column 2, Paragraph 1); and a rendering subsystem, including audio output devices (PCs, software, and headphones) (Pages 168-169 discussion under system architecture), arranged to generate an audio field in which said sound sources are synthesized at their associated rendering positions and with audibility as set by said collection-control means.

Regarding Claim 30, Schmandt further discloses the collection-control arrangement includes a user input arrangement for changing the collection state, at least in one direction (When the user tilts their head in the direction of a doorway while passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 31, Schmandt further discloses the collection-control arrangement is operative to automatically change the state of the collection, at least in one direction, upon detection of predetermined trigger conditions (When the user tilts their head in the direction of a doorway (i.e. trigger condition) while passing near it, entry is gained into the room (i.e. changing from collapsed to un-collapsed state) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 33, Schmandt further discloses the collection-control arrangement is operative to set the audibility data of the collection-representing sound source such that this source is muted in the audio field when the collection is in its un-collapsed state (When entry is gained into a room (i.e. un-collapsed state) braided audio

from the hallway goes silent (i.e. muted)) (Page 167, Column 2, first paragraph under Rooms heading).

Regarding Claim 34, Schmandt further discloses that the collection-control arrangement is operative in changing between collection states from hallway (i.e. collapsed) to room (i.e. un-collapsed), is accompanied by moving the member sound sources through the audio field between the location of the collection-representing sound source (braided audio is a mix of all the sounds in the cluster heard emitting from a doorway) (Figure 3, Page 163, paragraph bridging columns 1 and 2) and their normal locations (Figure 5).

Regarding Claim 35, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source provides an audio label for the collection, this label being repeated at intervals (When user is in hallway (i.e. collapsed state) braided audio is used as a single acoustic representation of a cluster of audio files (i.e. audio label) being repeated in intervals (Figure 2) (Page 166, Column 2, Paragraph 1).

Regarding Claim 36, Schmandt further discloses when the collection is in its collapsed state, the collection-representing sound source outputs at least extracts of the sounds associated with the collection member sound sources when un-collapsed (When user is in hallway (i.e. collapsed state) braided audio or collection-representing sound source (page 163 paragraph bridging column 1 and 2) emanates from doors which user is passing) (Figure 3).

Regarding Claim 37, Schmandt further discloses a notification arrangement operative when the collection is in its collapsed state, to provide via the collection-representing sound source, audio notifications of events related to the items represented by the member sound sources (When user is in hallway (i.e. collapsed state) braided audio (i.e. collection-representing sound source) is used to represent cluster of related audio files (i.e. member sound sources) (Page 167, Column 2, first paragraph under Rooms heading) and to convey the general topic of a story (i.e. notification of events) (Page 166, Column 1 last paragraph).

Regarding Claim 39, Schmandt further discloses the rendering-position determining arrangement comprises: a setting arrangement for setting the location of each said collection member sound source relative to an audio-field reference (audio files (i.e. sound sources) can be faded in and out of through head rotation (i.e. setting location)) (Page 167, column 2, first paragraph under heading of Rooms); a control arrangement for controlling an offset between the audio field reference (Figure 5) and a presentation reference (headphones), the presentation reference being determined by a mounting configuration of the audio output devices (headphones and position sensor on head) (Page 169, first full paragraph); and a deriving arrangement operative to derive the rendering position of each sound source based on the location of the sound source in the audio field and said offset (audio spatialization software (Page 168 and 169 discussion under system architecture).

Regarding Claim 41, Schmandt further discloses the setting arrangement comprises a user input arrangement (user can fade in and out of neighboring sounds

with head rotation) (page 167, column 2, first paragraph under heading Rooms) operative to enable a user change said offset, and a stabilization arrangement (position sensor) (Page 169, column 1, first full paragraph) operative to vary the said offset such as to stabilize the audio field reference relative to the world.

Claim Rejections - 35 USC § 103

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 1 above in view of Sibbald (US Patent 6,498,857). Schmandt discloses a method as stated above apropos of claim 1 but does not disclose the collection-representing sound source remaining present then the collection is un-collapsed. Sibbald discloses a method of synthesizing an audio signal having a virtual sound source. Figure 5 shows that at a distance (i.e. collapsed) one source (i.e. collection-representing sound) is sufficient to represent the truck but at close range (i.e. un-collapsed) a plurality or sources is used (Column 6 lines 51-61). As the closer the truck is to the listener the more sources need to be added to produce an authentic audio sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to keep the collection-representing sound source remaining present in the audio field to produce a more authentic audio output.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 1 above in view of McKiel Jr. (US Patent 6,046,722).

Schmandt discloses a method as stated above apropos of claim 1 but does not disclose using an audio label for services. McKiel Jr. discloses Figure 4 with audio label 42 and 44 which represent icons on a computer screen. When a curser moves closer to the icon an audible signal is generated which indicates this to a visually impaired user. The user would then select the icon for some sort of function or service (Paragraph bridging columns 5 and 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an audio label for services to help visually impaired users select a certain function.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 16 above in view of Sibbald (US Patent 6,498,857). Schmandt discloses an apparatus as stated above apropos of claim 16 but does not disclose the collection-representing sound source remaining present then the collection is un-collapsed. Sibbald discloses a method of synthesizing an audio signal having a virtual sound source. Figure 5 shows that at a distance (i.e. collapsed) one source (i.e. collection-representing sound) is sufficient to represent the truck but at close range (i.e. un-collapsed) a plurality or sources is used (Column 6 lines 51-61). As the closer the truck is to the listener the more sources need to be added to produce an authentic audio sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to keep the collection-representing sound source remaining present in the audio field to produce a more authentic audio output.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 16 above in view of McKiel Jr. (US Patent 6,046,722). Schmandt discloses an apparatus as stated above apropos of claim 16 but does not disclose using an audio label for services. McKiel Jr. discloses Figure 4 with audio label 42 and 44 which represent icons on a computer screen. When a curser moves closer to the icon an audible signal is generated which indicates this to a visually impaired user. The user would then select the icon for some sort of function or service (Paragraph bridging columns 5 and 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an audio label for services to help visually impaired users select a certain function.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 26 above in view of Sibbald (US Patent 6,498,857). Schmandt discloses a device as stated above apropos of claim 26 and further discloses a head position sensor mounted on the headphones (page 169, column 1, first full paragraph) which makes the device stabilized with reference to the world. Schmandt does not disclose the sources corresponding to the same direction as real-world locations. Sibbald discloses a method of synthesizing an audio signal having a virtual sound source. Figure 5 discloses a plurality of sound sources (A through D) from where sound appears to emanate (Column 6, lines 53-61). These sound sources lie in the same direction as they would in a real-world location. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that audio

sources could have an associated real-world location to produce a more realistic sound output.

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 29 above in view of Sibbald (US Patent 6,498,857). Schmandt discloses an apparatus as stated above apropos of claim 29 but does not disclose the collection-representing sound source remaining present then the collection is un-collapsed. Sibbald discloses a method of synthesizing an audio signal having a virtual sound source. Figure 5 shows that at a distance (i.e. collapsed) one source (i.e. collection-representing sound) is sufficient to represent the truck but at close range (i.e. un-collapsed) a plurality or sources is used (Column 6 lines 51-61). As the closer the truck is to the listener the more sources need to be added to produce an authentic audio sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to keep the collection-representing sound source remaining present in the audio field to produce a more authentic audio output.

8. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 29 above in view of McKiel Jr. (US Patent 6,046,722). Schmandt discloses an apparatus as stated above apropos of claim 29 but does not disclose using an audio label for services. McKiel Jr. discloses Figure 4 with audio label 42 and 44 which represent icons on a computer screen. When a curser moves closer to the icon an audible signal is generated which indicates this to a visually impaired user.

The user would then select the icon for some sort of function or service (Paragraph bridging columns 5 and 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an audio label for services to help visually impaired users select a certain function.

9. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmandt as applied to claim 39 above, and further in view of Sibbald (US Patent 6,498,857). Schmandt discloses an apparatus as stated above apropos of claim 39 and further discloses a head position sensor mounted on the headphones (page 169, column 1, first full paragraph) which makes the device stabilized with reference to the world. Schmandt does not disclose the sources corresponding to the same direction as real-world locations. Sibbald discloses a method of synthesizing an audio signal having a virtual sound source. Figure 5 discloses a plurality of sound sources (A through D) from where sound appears to emanate (Column 6, lines 53-61). These sound sources lie in the same direction as they would in a real-world location. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that audio sources could have an associated real-world location to produce a more realistic sound output.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JIM

XU MEI
PRIMARY EXAMINER